Can water treatment systems remove arsenic?

Common treatment systems like water softeners, carbon filters and sediment filters cannot adequately remove arsenic from drinking water. Do not purchase a treatment system unless you have first checked with the Departments of Natural Resources (DNR) or Commerce.

Today, distillation and reverse osmosis with pretreatment are the only treatment methods approved for arsenic reduction. These treatment systems are “point-of-use” systems and generally only treat one faucet that is used for drinking and cooking. Currently, these agencies are working with others to evaluate additional treatment technologies that will reduce arsenic in the water supply.

It is recommended that you use a licensed plumber to install a treatment system on your water supply. You will need to closely follow the maintenance instructions provided by the manufacturer to make sure the system continues to operate as a viable arsenic reduction water treatment system.

Drilling a new well may be necessary for extremely high levels of arsenic. Special well construction guidelines are available from the DNR.

Where can I get more information?

The following health departments have information about arsenic exposure. Contact your local DNR office or consult the telephone book to find a certified laboratory that can test your water for arsenic.

Health Departments

State Dept. of Health and Family Services,
Division of Public Health 608-266-0923

Brown Co. Health Dept. 920-448-6400

Outagamie Co. Health Dept. 920-832-5100

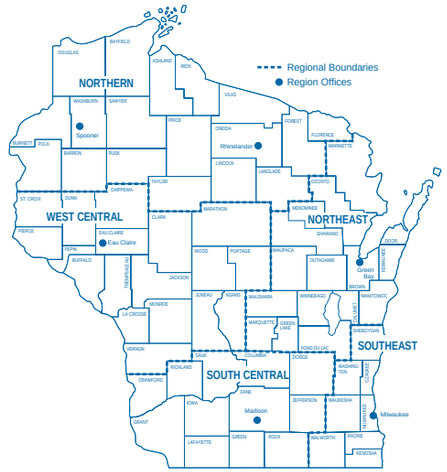
Winnebago Co. Health Dept. 920-232-3000

Department of Commerce

Safety and Building Division
Plumbing Product Review
PO Box 7162
Madison, WI 53707-7162
(608) 267-1401

Talk to your well driller or local private water systems staff person at the DNR for information on arsenic and your well. Use the map and contact information on the back of this brochure to get in touch with a water staff person.

Department of Natural Resources Offices



DNR Central Office
101 S. Webster, P.O. Box 7921
Madison, WI 53707-7921
(608) 266-0821

Northern Region
810 W. Maple Street
Spooner, WI 54801
(715) 635-2101

107 Sutliff Avenue
P.O. Box 818
Rhinelander, WI 54501
(715) 635-8900

Northeast Region
1789 Shawano Avenue
P.O. Box 10448
Green Bay, WI 54307
(920) 492-5800

Southeast Region
4041 N. Richards Street
P.O. Box 12436
Milwaukee, WI 53212
(414) 263-8500

West Central Region
404 S. Barstow
P.O. Box 4001
Eau Claire, WI 54702-4001
(715) 839-3700

South Central Region
3911 Fish Hatchery Road
Fitchburg, WI 53711
(608) 275-3266

DNR Web
www.dnr.state.wi.us/org/water/dwg/

This brochure is available in alternate format upon request. Please call 608/266-0821.

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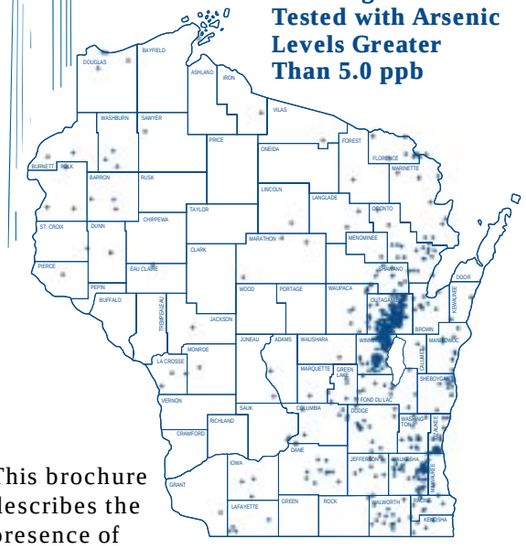
Arsenic in Drinking Water

Drinking Water Wells Tested with Arsenic Levels Greater Than 5.0 ppb



This brochure describes the presence of arsenic in Wisconsin’s drinking water supplies, potential health effects, testing private well water, and ways to reduce arsenic levels in your drinking water.

Produced by Department of Natural Resources in cooperation with the State Department of Health & Family Services. Reviewed by the GCC Education Subcommittee.

Wisconsin Department of Natural Resources
Bureau of Drinking Water & Groundwater

What is arsenic?

Arsenic is an element that occurs naturally in soil, bedrock, groundwater, and ocean water. Traces of arsenic are also found in groundwater, lakes, and rivers. Foods like fruits, vegetables, and seafood can also contain arsenic. Some fruits and vegetables absorb traces of arsenic from the soil they grow in. Ocean fish and seafoods naturally have high levels of an organic non-toxic form of arsenic.

High levels of inorganic arsenic, the most toxic form, have been found in hundreds of private drinking water wells in Wisconsin. Most of the impacted wells are located in Outagamie, Winnebago and Brown Counties where bedrock is naturally high in arsenic. The map on the cover shows the location of wells that have been tested and found to contain arsenic.

How can I be exposed to arsenic?

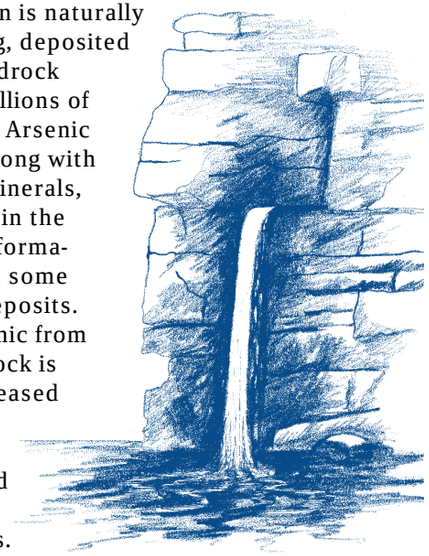
Since arsenic is a natural part of our environment, everyone is exposed to small amounts. Sources of arsenic exposure include:

- foods containing traces of arsenic
- smoke from wood, coal, tobacco products
- dust from some industrial processes
- drinking water that contains elevated levels of arsenic

People who are exposed to arsenic over a period of years can experience a variety of health problems. Arsenic is easily absorbed into your system by drinking or breathing it. It is not easily absorbed through the skin and does not evaporate from water. In most cases, it is safe to use water that contains arsenic to bathe and for household chores.

How does arsenic get into the water supply?

The arsenic found in Wisconsin is naturally occurring, deposited in the bedrock layers millions of year ago. Arsenic occurs along with sulfide minerals, common in the bedrock formations and some glacial deposits. The arsenic from the bedrock is being released into the groundwater and drawn into wells.



Scientists think arsenic is being released into the groundwater because people are using more water than ever before. During the past ten years, about 10,000 new wells have been constructed in this area. Water quality problems have increased as more new wells are being drilled and demands on groundwater continue to increase.

Experts know that increased water demands have lowered the water table which has allowed oxygen to get into the aquifer, creating chemical reactions that release arsenic into the water. Scientists are studying other possible factors, but until the contamination is fully understood, arsenic will remain a concern.

How can arsenic affect my health?

Drinking arsenic-contaminated water has been associated with the following health effects:

- Skin cancer
- Internal cancers (bladder, prostate, lung and other sites)
- Thick, rough skin on hands and feet
- Unusual skin pigmentation (dappling of dark brown or white splotches)
- Numbness in the hands and feet
- Circulatory disorders
- Tremors
- Stomach pain, nausea, diarrhea
- Diabetes (this affect has not been confirmed)

If you think that you or someone in your family has symptoms from arsenic exposure, talk to your doctor. Also, test your well water for arsenic.

Can medical tests determine if I've been exposed to arsenic?

Yes. A urine test is a simple, inexpensive way to determine if you are being exposed to arsenic. However, this test cannot distinguish what type of arsenic is in your body. To find out whether you are being exposed to a toxic form, it is essential that you do not eat any fish or seafood for at least 3 days before your test.

How can I find out if my water is safe to drink?

You cannot smell, taste or see arsenic in your private well water. The only way to know if your drinking water contains arsenic, is to have a water sample from your private well tested by a certified laboratory. A list of certified labs is available from the DNR or online at: **www.dnr.state.wi.us/org/water/dwg/WELLTEST**

If you use water from a public water system, contact your local DNR office or the public water system to learn about their arsenic test results.

If the arsenic level in your well is above 50 parts per billion (ppb), stop drinking your water and use bottled water for drinking and preparation of beverages or foods like baby formula, soup, and coffee. You can continue to use water from your well to bathe, wash dishes, clean, and for laundry.

If the arsenic level in your well is between 5 and 50 ppb, you may want to reduce your exposure by using another source of water for drinking. (See the map on the brochure cover for areas in Wisconsin where arsenic levels may exceed 5.) You should also retest your well water each year because concentrations of arsenic can change over time.